



## Work Process Schedule

<b>Precision Agriculture Technicians</b>		
<b>Job Description:</b> Apply geospatial technologies, including geographic information systems (GIS) and Global Positioning System (GPS), to agricultural production or management activities, such as pest scouting, site-specific pesticide application, yield mapping, or variable-rate irrigation. May use computers to develop or analyze maps or remote sensing images to compare physical topography with data on soils, fertilizer, pests, or weather.		
<b>RAPIDS Code:</b> 3095CB	<b>O*NET Code:</b> 19-4012.01	
<b>Estimated Program Length:</b> 2 Years		
<b>Apprenticeship Type:</b> <input checked="" type="checkbox"/> Competency-Based <input type="checkbox"/> Time-Based <input type="checkbox"/> Hybrid		

### Suggested On-the-Job Learning Outline

Record research or operational data.		
Competencies	Date Completed	Initial
A. Document and maintain records of precision agriculture information.		

Collect geographical or geological field data.		
Competencies	Date Completed	Initial
A. Collect information about soil or field attributes, yield data, or field boundaries, using field data recorders and basic geographic information systems (GIS).		

Analyze environmental data.		
Competencies	Date Completed	Initial
A. Use geospatial technology to develop soil sampling grids or identify sampling sites for testing characteristics such as nitrogen, phosphorus, or potassium content, pH, or micronutrients.		
B. Identify spatial coordinates, using remote sensing and Global Positioning System (GPS) data.		
C. Identify areas in need of pesticide treatment by analyzing geospatial data to determine insect movement and damage patterns.		

Analyze geological or geographical data.		
Competencies	Date Completed	Initial
A. Analyze geospatial data to determine agricultural implications of factors such as soil quality, terrain, field productivity, fertilizers, or weather conditions.		
B. Analyze data from harvester monitors to develop yield maps.		
C. Demonstrate the applications of geospatial technology, such as Global Positioning System (GPS), geographic information systems (GIS), automatic tractor guidance systems, variable rate chemical input applicators, surveying equipment, or computer mapping software.		

Calibrate scientific or technical equipment.		
Competencies	Date Completed	Initial
A. Install, calibrate, or maintain sensors, mechanical controls, GPS-based vehicle guidance systems, or computer settings.		
B. Program farm equipment, such as variable-rate planting equipment or pesticide sprayers, based on input from crop scouting and analysis of field condition variability.		

Prepare maps.		
Competencies	Date Completed	Initial
A. Create, layer, and analyze maps showing precision agricultural data, such as crop yields, soil characteristics, input applications, terrain, drainage patterns, or field management history.		
B. Draw or read maps, such as soil, contour, or plat maps.		

Maintain laboratory or technical equipment.		
Competencies	Date Completed	Initial
A. Install, calibrate, or maintain sensors, mechanical controls, GPS-based vehicle guidance systems, or computer settings.		

Research crop management methods.		
Competencies	Date Completed	Initial
A. Compare crop yield maps with maps of soil test data, chemical application patterns, or other information to develop site-specific crop management plans.		

Apply knowledge or research findings to address environmental problems.		
Competencies	Date Completed	Initial
A. Apply precision agriculture information to specifically reduce the negative environmental impacts of farming practices.		

Advise others on the development or use of new technologies.		
Competencies	Date Completed	Initial
A. Provide advice on the development or application of better boom-spray technology to limit the overapplication of chemicals and to reduce the migration of chemicals beyond the fields being treated.		
B. Advise farmers on upgrading Global Positioning System (GPS) equipment to take advantage of newly installed advanced satellite technology.		

Prepare operational reports.		
Competencies	Date Completed	Initial
A. Prepare reports in graphical or tabular form, summarizing field productivity or profitability.		

Develop agricultural methods.		
Competencies	Date Completed	Initial
A. Participate in efforts to advance precision agriculture technology, such as developing advanced weed identification or automated spot spraying systems.		

Conduct climatological research.		
Competencies	Date Completed	Initial
A. Analyze remote sensing imagery to identify relationships between soil quality, crop canopy densities, light reflectance, and weather history.		

## Suggested Related Instruction Outline

<b>Provider</b>	
<b>Name:</b>	
<b>Address:</b>	
<b>Email:</b>	<b>Phone Number:</b>
<b>Suggested Related Instruction Hours: X</b>	

<b>Course Number</b>	<b>Course Title</b>	<b>Contact Hours</b>
<b>Total</b>		